



Australian Bureau of Statistics

1351.0.55.059 - Research Paper: Unemployment Duration in Australia: A Longitudinal Analysis with Missing Data, May 2016

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Summary

Background

BACKGROUND

This study is an extension of recently-completed ABS research that made use of the ABS Longitudinal Labour Force Survey file.

From this research, two papers were published in 2014. One focused on the methodologies developed to analyse the labour market transitions and the other on an application: understanding the factors that explain these transitions.

This paper extends the previous research on a number of fronts. From a methodological perspective, the analysis is based on a longitudinal multinomial framework, instead of the previous longitudinal binary models. The new framework has carefully been built so as to (1) advance the previous methodology and adequately address the specific features of the dataset, which differ substantially from other similar datasets (e.g. HILDA), and (2) to address the empirical question – modelling the duration of unemployment – by accounting for the longitudinal nature of the data and the different types of exits out of unemployment.

The analysis makes use of multiple imputation – a powerful modern tool for handling missing data – adopting a Bayesian approach. This is the first time the method has been implemented in the analysis of data at the ABS. The imputation methodology will play important roles in the ABS Statistical Business Transformation Program, particularly with the use and analysis of administrative and longitudinal datasets.

The analysis includes both empirical and design-related variables and makes a number of adjustments to the previous analyses, such as the inclusion of those aged 18–20 years, the inclusion of an industry variable, and the redefining of the previous labour force status indicator. The hope is that the analysis adds value to the dataset, produces statistically robust results, addresses a topic of key interest to the public, and promotes the potential of the ABS data.

About this Release

This paper analyses the conditional probability of exiting unemployment of Australian individuals, aged 18–65 years, over the 2008–2010 period. The paper makes use of the ABS Longitudinal Labour Force Survey file, which includes more than 1.8 million records of

around 150,000 households, which were observed on a month-by-month basis for up to eight months.

Multiple imputation is used to impute the missing values of previous educational attainment – a key covariate included in the analysis – using Bayesian Monte Carlo simulation methods. The subsequent investigation implements discrete-time hazards models to examine the duration of unemployment, with allowance for competing risks. The analysis includes empirical as well as design-related variables.

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